

REMARKS/ARGUMENTS

Applicant thanks Examiner for the detailed Office Action dated March 15, 2006. In response to the issues raised, the Applicant offers the following submissions and amendments. Furthermore, we enclose a Terminal Disclaimer linking the term and ownership of any patent granted on the present application to that of co-pending USSN 10/773,195.

Amendments

The Abstract has been amended to remove 'claim-like' language such as 'comprising'. Independent claims 1, 19 and 38 have been amended to highlight the features distinguishing them from the cited art.

Claims 1, 19 and 38 have also been amended to address the antecedent issue identified by the Examiner.

Pursuant to the above amendments, the relevant dependent claims have been amended to align with the amendments to the independent claims.

Accordingly the amendments do not add new matter.

Abstract

As discussed above, we believe that the amended Abstract provides a clear and concise description of the disclosure in compliance with 37 CFR 1.72.

Double Patenting

Claims 1-54 stand provisionally rejected as not patentably distinct from claims 1, 5-19, 23-38 and 42-54 of co-pending USSN 10/773,195 in view of US 6,102,528 to Burke et al. We trust the enclosed Terminal Disclaimer to '195 addresses this issue.

Claims – 35USC§103

Claims 1 and 19 *inter alia* stand rejected as obvious in light of US 5,706,041 to Kubby, in view of US 4,797,692 to Ims, in further view of US 6,102,528 to Burke et al. In response, claims 1 and 19 have been amended to distinguish the present invention from the cited references. The citations fail to teach the combination of claims elements in amended claims 1 or 19.

The amended independent claims clarify that the invention relates to thermal inkjet printheads that suspend the heater element in a plane parallel to the ejection aperture. Furthermore the ejectable liquid is fed into the chamber through an inlet in the wall opposite the wall enclosing the ejection aperture. This allow the heater element to be surrounded by a side wall, unlike 'side feed' printheads where the heater element is essentially not bounded on the side having the ink inlet. As explained throughout the specification, the side wall proximity and planar heater element in parallel with the ejection aperture allows the pressure pulse to be better focused toward the ejection aperture for more efficient and accurate droplet ejection. However, this configuration means that the heater can not be deposited directly on top of its associated drive circuitry because of the ink inlet passage. Not only does the circuitry need to avoid the ink inlet passage itself, but it also needs to be spaced from the passage because of ink diffusion between the layer interfaces can disable drive circuits. Unfortunately spacing the drive circuitry a relatively long distance from the heater, or in two parts separated by the inlet passage, means the length of conductor to the heater electrodes, or between separate sections of circuitry, causes additional resistive losses that lower the printhead efficiency and increase the heat dissipated

into the substrate. Fabricating the drive circuitry for each nozzle in a single area on the substrate, and depositing the heaters out of registration with the underlying circuitry, is an effective compromise between minimizing conductor length and spacing the circuitry from the ink inlet.

The printheads of Kubby, Ims and Burke are all side feed designs. None of the citations recognize the benefits of feeding ink to the chambers through the wafer, perpendicular to the plane of deposition. Accordingly, the cited references fail to anticipate amended claims 1, 19 and 38. The additional references cited against several of the other dependent claims, also fail to teach these features. It follows that all the dependent claims are likewise novel and non-obvious.

It is respectfully submitted that the Examiner's rejections have been successfully traversed. Accordingly, favorable reconsideration is courteously solicited.

Very respectfully,
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